RECORD OF SOCIETY OF ACTUARIES
1988 VOL. 14 NO. 4A

EXPENSE STRATEGY IN PRICING INDIVIDUAL INSURANCE POLICIES

Moderator: MARSHALL H. LYKINS
Panelists: SHANE A. CHALKE
MARK A. DAVIS
SCOTT D. MCINTURFF
JEFFREY D. MILLER
Recorder: MARSHALL H. LYKINS

- o Presenters will discuss assumptions developed in various situations.
  - -- Introduction of a product by a newly formed company
  - -- Introduction of a new product line by an existing company in which the field compensation and administrative support differ significantly from current product lines
  - -- Introduction of a product in a new market
- o How will the start-up cost of each venture be reflected in the product pricing? How will unit cost assumptions be developed? To what extent is marginal pricing appropriate?

MR. MARSHALL H. LYKINS: In preparing this panel, I looked back over panel discussions of the last several years and surprisingly found very few panel discussions relating specifically to expenses or expense issues. Most of the discussions relative to expenses have been embedded in other topics, more general topics such as product development, where expense issues are just some of the issues that were taken into account as part of the assumptions relating to product development. There have been panel discussions on dividends and on profitability, where expenses are frequently a major determinant. More recently, there have been panels on inflation where expenses, of course, have been important. But there have been very few sessions specifically on expenses. So now we have a chance to give specific treatment to a very important topic.

I should note that there was an excellent panel session on expenses exactly 10 years ago, at a joint meeting with the Casualty Society.

Most of the discussions relative to expenses that you do find in panel discussions of the past have related to such topics as allocation of expenses, fixed versus variable, line of business versus functional, actual versus expected, statutory versus GAAP, field versus home office, selling versus maintenance -- a number of very theoretical issues. I thought I would try a somewhat different approach for this panel. Several of our panelists will draw upon their experiences in one or two specific types of situations, not really case histories but drawing on case histories that they're familiar with, to come up with a few issues, to make it a little bit more real. We have four panelists, three of whom are consultants, and one who is from a large mutual company.

We have Mark Davis, a consulting actuary from Chicago working with Tillinghast/ Towers Perrin; we have Jeff Miller, a consulting actuary, also with

Tillinghast/Towers Perrin; we have Shane Chalke, a consulting actuary with his own firm in Arlington, Virginia; and we have Scott McInturff, who is an actuary for The New England, which is my company.

MR. MARK A. DAVIS: I'm going to talk about a situation faced by an actual client company. In order to protect the innocent, I'm going to refer to this company as Company A. This company is currently in a tremendous growth phase and I'll discuss the challenges facing Company A and then discuss how these challenges impact Company A's expense strategy in pricing individual insurance products.

By way of background, this company is a life insurance subsidiary of a large foreign insurance organization. This organization is active worldwide in both life and Property and Casualty (P&C) insurance. Company A has been operating for many years but in many respects it's facing the same challenges as those faced by a newly formed company. Initially, Company A's operations were conducted on a brokerage basis using multiple line producers of affiliated companies. The use of these P&C agents was never very successful and in 1985, Company A began to develop an agency organization utilizing personal-producing life agents. The personal-producing general agent (PPGA) strategy has been successful and in just over two years, Company A has nearly 4,000 agents in its fold. In these two years, the growth achieved by Company A has been tremendous. First-year premium in 1987 showed a five-fold increase over the corresponding figure in 1985. Admitted assets have doubled in the same period.

However, as we are aware, this level of growth will wreak havoc on the statutory income statement. In 1987, statutory losses amounted to $10 million on just $21 million of premium. Commissions represented 42% of total premium income. General insurance expenses amounted to an incredible 58% of premium.

Company A's parent organization has contributed $49 million to surplus since inception, including $22 million in 1987. This has helped the company to maintain its Best's A rating, which the company feels is crucial to the development of its agency force. The company's administrative system, which is homegrown, cannot handle today's product complexities. Many items have to be processed manually, some even in the Actuarial Department. Essentially, the company has only one line of business, ordinary life. Nearly 100% of new business issued is universal life.

By all accounts, Company A's expenses would be considered extremely high. As I mentioned before, 1987 general expenses came in at 58% of premium income. This level is probably difficult for most of us to appreciate, based on our own experiences, but let's consider the same measure for some large companies. For the "usually quiet" company, they come in at about 6%. For "the rock," they come in at about 11%. The "good hands" company, about 7%. The "umbrella" company, about 9%. I looked in Best's for some smaller, rapidly growing companies that I know about and the highest ratio that I could find was about 30%. Thus, I think it's fair to say that Company A's expenses are at unprecedented levels.

I see four basic causes for this high level of expenses: first of all, they're so small that they don't have any critical mass. In addition they have been aggressively developing an agency organization. Third, they have inefficient administration. Their administration is much more labor intensive that that of

typical life insurers. And, last and also least, they seem to receive some unfavorable expense allocations within the parent organization.

I'm going to talk now about Company A's primary pricing considerations. First of all, their products must be competitive. This is so because they have to attract and retain agents. They have to support their growth plans which will result ultimately in critical mass and economies of scale. They really do have a desire to become a major player in the ordinary life arena. They also believe that their products must ultimately be profitable. They realize that overall statutory profitability is a long way off, given their current growth rate, their inefficient administration, the lower margins available in today's interest-sensitive products and the fact that this company does not have an in-force block of traditional business with reserves at 2% or 3% interest to fall back on. I think for many companies, these traditional in-force blocks have masked very low margins contained in their current products.

Company A prices its products with realistic if not conservative assumptions for lapse, mortality and investment spread so that when its current growth phase does level out, the in-force block should be profitable.

Thus, the company is concerned with ultimate profitability and they do not have any loss leaders, so to speak. Another thing that they're very concerned about is maintaining their current Best's rating of A. This is and has been difficult given the string of statutory losses that the company has run up. Thus, they do have an incentive to reach statutory profitability as soon as possible. To this end, they have entered into surplus relief reinsurance arrangements with affiliated companies in an attempt to minimize the surplus strain from new business. The Company does feel that maintaining their Best's rating is very crucial because without that A rating they would have a much harder time recruiting new agents.

Next, I'm going to address some expense theory and after that Company A's expense strategy in their pricing.

In theory, which expenses of a company such as A are justifiably charged to policyholders in the pricing process? First of all, what about the overhead costs involved in building an agency force? Are those justifiably charged to policyholders? I think not. I think these costs should be considered an investment on the part of the company's owners. However, I feel that overhead costs incurred to maintain an existing agency force and to service the agency force are a normal cost of doing business and should be charged to policyholders in the pricing process.

What about the cost of inefficient manual administration or the development or purchase of a new administrative system? Again, I say no, these shouldn't be charged to policyholders; these costs should be considered an investment by the company's owners. I believe, in pricing, some reasonable standard level of administrative cost should be included.

What about commissions? Here I'm going to get a little more theoretical. Basically, I feel that commissions can be split into two types: Type I commission fairly compensates agents for the sales effort. This is the familiar type of commission that we all work with; Type II commission is that portion, if any, of the total commission which is provided to help in the recruitment of agents. I believe very few companies actually have Type II commissions but I do believe

that Company A does pay a small amount of this Type II commission. I feel that Type II commissions should represent an investment by the company's owners and should not be charged to policyholders. Obviously, this distinction between Type I and Type II commissions is somewhat theoretical. In practice, I'm not aware of any company that does not provide for all of its commission expense in the pricing process. However, I do think the theoretical distinction does have some merit.

In the real world, a viable product will not result if all of Company A's expenses are included in product pricing. The competitive market for insurance products may dictate just what expenses and the level of those expenses which can be included in pricing a product; thus, the market itself may determine what expenses may be recovered through charges to policyholders.

What is Company A's expense strategy in pricing? The company cannot meet corporate objectives if all current expense levels are reflected in pricing. The resulting uncompetitive products will not allow for the planned agency growth, the budgeted level of new sales, and the critical mass to be achieved in as short a time as planned. So, what does Company A actually do in its pricing? First, keep in mind that A's products are designed and priced to be competitive. I would classify them as being in the middle or low end of the top quartile of the competitive scale, somewhere near the 80 or 85 percentile. They are competitive but I don't think they are unreasonably so. Company A, generally, does not reflect any start-up costs in pricing. I feel this is proper as start-up costs should be considered investments by the company's owners. However, Company A does reflect some overhead costs in pricing. They will reflect as much overhead as competitive considerations will allow. Thus, agency buildup costs are not directly reflected. The company does not, at this time, reflect actual unit costs in its pricing; however, an assessment of current and future unit costs is made. These actual levels would, if used, result in an uncompetitive product.

What A actually does is to reflect industry norms for underwriting costs. They reflect actual commissions, even though some of their commissions could be classified as Type II. They reflect marginal policy maintenance expenses. They have almost no choice but to use marginal expenses in order to have a reasonably competitive product. Thus, A does not recognize their current expenses associated with inefficient administration. Company A's strategy can be summed up by saying that within the framework of realistic and attainable persistency, mortality, and investment assumptions, they reflect in pricing as much expense as possible if the result is to be a reasonably competitive product.

What are the implications of this expense strategy? First of all, corporate objectives, especially growth, are achieved because competitive products help in agent recruitment and new business sales. Second, short-term statutory profitability is not achieved because the surplus strain from new business is great and they have a serious expense overrun from the level built into their products. Third, long-term profitability may not be realized if the expense reductions anticipated never materialize. However, by achieving the corporate objective for growth, A is positioning itself for future profitability. Growth will fill the current excess capacity leading to a more efficient use of resources. Economics of scale will be realized and unit costs will ultimately decrease. Agency growth will ultimately stabilize and overhead costs will decline on a relative basis. Surplus strain will lessen as new business becomes a smaller and smaller portion of total business.

If you were Company A's actuary, what expense strategy would you use to achieve the company's objectives of agency development and new business growth? My personal approach would be the following: for the short term, the next one to three years, continue the current approach, which is essentially a marginal expense strategy. For the midterm, say, the next three to five years, use some form of expense grading by duration using marginal expenses in the early years of a policy and grading them to ultimate levels which reflect anticipated actual expenses down the road. In the long term, once the excessive growth phase is completed, once critical mass has been attained, pricing should reflect actual expense levels. If expense levels are still well beyond industry norms, Company A should take stock of its operations and determine what areas and functions require attention in terms of expense control.

I'd like to close by saying that every situation is unique and I do not promote marginal expense strategies; but, in certain situations, there really isn't much of a choice. I believe Company A is in one of these situations. Keep in mind, Company A has the backing of a multi-billion dollar organization that is committed to becoming a major player in the U.S. Another new company in a similar position as Company A may not have that luxury.

MR. SCOTT D. MCINTURFF: I am going to speak about using pricing unit costs as a management tool. My perspective is that of an actuary in the business planning department of a mutual company. Actuaries often focus only on the technical aspects of product pricing and unit costs and forget to focus on the broader picture. It is this broader perspective on which I will focus.

Unit costs for pricing reflect a company's philosophy towards a number of things: towards service, which will impact persistency; towards underwriting, which will affect the mortality and morbidity; towards marketing, which will have a direct impact on sales; and towards the field force, which will impact everything. And, most important, pricing will impact one of the company's most important resources, the employees. Pricing reflects the attitude and the philosophy the company has towards its employees. The expenses built into the product pricing are the lifeblood of the company and are an important component of competitiveness and profitability. Actuaries must elevate their role above that of being mere technicians in the process of developing pricing unit costs and must become facilitators in a dynamic management process.

The key to success in unit cost management is development of the right tools. You cannot change a tire with a screwdriver and you cannot manage unit costs and expenses without the right tools. What I will describe is the process that one company has developed to manage the unit cost process. Although my comments relate specifically to individual insurance and annuity lines of business, I think they are relevant to all lines of business. The expenses that I will focus on are all home office and field expenses, excluding the field compensation formula component of product pricing, i.e., the commissions, bonuses, etc.

I'm going to start by describing the methodology that has been used at many companies for a number of years. I want to point out how the processes that we inherit are not always appropriate as management tools.

Each home office employee would annually fill out a time allocation study which allocates his or her expenses to several product lines and to nearly 50 functions, sub-functions and projects. This process is usually very unpopular with the

employees and the company management, although the accountants are in their glory at this time. (This is one example that management can give which proves that actuaries and accountants exist only to make life complex and miserable.) The information would be summarized by the accountants into about 18 major functions. These expenses would then be allocated to the pricing units, and unit costs would be developed for use in pricing and dividend scales. The time studies would not be filled out consistently from year to year, which makes them difficult to use as tools to analyze what is going on in the company. Each function would have expenses allocated to it from many departments and organizations within the company.

Under such a system, nobody feels responsible for functional management, that is, for unit cost management. The process in place does not allow for that responsibility to happen. Thus, the new unit costs would be incorporated into the dividend scale and no one would be overly concerned that the unit costs were increasing, as long as surplus was adequate, statutory profitability was strong, persistency was good, and dividends were increasing (due to higher investment returns).

The 1980s changed that, especially for mutual companies, which didn't have access to capital markets and found that competition was placing additional pressure on expense and profit margins. New business strain was depleting the statutory surplus that had been accumulated over the years and sales of guaranteed investment contracts (GICs) and single premium deferred annuities (SPDAs) eroded those surplus margins further.

In this environment, we started focusing on all aspects of product pricing to develop a strategy to manage these problems of the 1980s. As we examined the expenses, we found that we had not successfully managed our unit costs and that we didn't have a process in place to do this. We needed a system that could be used by management to integrate pricing and unit cost processes, the budgeting process and the business planning process. Management needed better information to identify the source of the unit cost problem and to develop a strategy to attack the problem. Management needed a tool to quantify the impact that budgetary decisions would have on product pricing. The tool had to be simple enough to be understood by management. It was obvious that the unit cost process that was in place was not going to provide the tools to manage this problem.

We began to develop a new unit cost methodology with the key concept that each function must exist within the unit cost "revenue" provided by product pricing. This approach is the flip side of the historical process in that it assumes that unit costs determine expenditures rather than that expenditures determine unit cost. Although this seems to be simply a discussion of which came first, the chicken or the egg, it's in fact a key philosophical change in direction for operating a company.

I'm going to describe five steps that can be used to bring about a change in methodology to integrate the unit cost and pricing methodologies for expenses and the budgeting and business planning functions.

The first step is redefine the existing functional definitions. Functions are defined that follow the organizations of the company rather than cut across all organizations. This is critical because it gives responsibility to the management

of the various organizations for the management of the functional expenses. Functional and organizational definitions are then synonymous.

We might, for example, consider eight functions for this process: (1) the marketing function; (2) the employee benefit services function; (3) the new issue and underwriting function; (4) the client and agent/agency services function; (5) the actuarial and individual support function; (6) the system development and testing function; (7) the distribution function; and (8) the overhead function. Our goal in the definition of these functions is to have most divisions in the company allocate 100% of their expenses to a single function rather than to a myriad of functions, as in the old system. One benefit of this approach is that the accountants spend a lot more of their time making sure that the allocation to the product lines is reasonable and less time arguing about functional definitions. Also, this strategy makes the organizational managers, the senior vice presidents of the different operations, the functional managers.

In this process, it is still necessary to allocate about 11% of our expenses, such as the system production expenses and expenses of the Law Department, across the functions. Nevertheless, under this approach, we can describe our functions and people can picture the company organizations that make up the functions. The greatest gain is that management now has a grasp of what a function is and what it means to include that function within our product pricing through unit costs.

The second step is to establish distribution and overhead lines of business. The financials for those lines are fairly simple: actual expenses compared with unit cost "revenue" provided by product pricing. With this methodology, product managers are responsible for managing the rest of the expenses and their lines would be allocated expenses for distribution and overhead consistent with overall corporate guidelines.

The third step in the process is to allocate the expenses by function to the appropriate units. It is important to allocate expenses, especially variable expenses, on some justifiable basis and not arbitrarily.

The fourth step is to establish unit costs by function for each newly defined function.

Finally, units are projected, "revenue" by function is projected from unit costs and budgets are established consistent with that "revenue." Now we can begin managing unit costs rather than just calculating unit costs.

There may, however, be another step that is the most important. That step is communication. Actuaries need to provide tools to persuade management to participate in the process of managing unit costs and to understand how their decisions impact product pricing. If successful, this will lead to management helping to target areas, strategies and business plans to reduce expenses.

Our experience with this new methodology has been very positive. Senior management does better understand and appreciate unit costs and their impact on product pricing. They've certainly become more active participants in the pricing process and the communication has opened doors for questions and investigation into the philosophy of product pricing.

Several points are critical to the success of this process.

1. It is critical to have a good line-of-business allocation.

2. It is important to use consistent unit costs between different product lines.

3. It is important to use appropriate cost accounting ratios and to initiate technical discussions as to the distinction between variable and fixed expenses and their allocation to the different unit measures.

4. It's critical to have communication with the product managers to explain, not only the development of unit costs, but how to use the tool to manage the company.

5. The process has raised some philosophical questions: for example, should systems development, distribution and overhead be priced on a consistent basis among all lines?

6. Another part of the process is to involve management when you are developing unit costs for a new product. For example, in developing a new annuity product, the product actuary and the product manager may meet with the director of annuity administration, explain the unit cost process and establish a unit cost for pricing that would be the source of "revenue" for administration.

7. Other steps that are important are to make sure that your business plans are consistent with your budgets and then to communicate to the appropriate people that, if the business plans don't materialize, this will have an impact on their budget. It will mean budget reductions either in the current year or in the following year.

   If your goal is to maintain unit costs, you have to prepare management that there will be different budget goals throughout the company. Rather than everybody having a 5% budget goal, there may be a range of budget caps to meet the different objectives and to maintain the unit costs.

8. Last of all, it is important in this process to be flexible. It's not a system that's going to be set in stone. Management needs to understand the trade-offs in managing unit costs. Sometimes you must take unit costs away from one area and increase them in another as priorities change, if your objective is to maintain your unit costs.

I'd just like to conclude by saying that unit cost management is an important part of the pricing process. We need to have a tool to manage unit costs before they manage us. The goals in developing this process should be as follows: (1) to educate management concerning the relationship between pricing, budgeting and business planning; (2) to make management accountable for its pricing and budgeting decisions; (3) to provide the tools to facilitate this process; (4) to enhance the communication between actuaries and management; and (5) to make certain that the pricing process is a participative process and not a process with an actuary sitting in a dark little room developing unit costs.

MR. SHANE A. CHALKE: The subject that I'm going to talk about is the last point on the description for this session, To What Extent is Marginal Pricing Appropriate? What I'd like to do is begin by being so brash as to go ahead and

answer the question. The answer is that marginal pricing is appropriate at all times. Marginal pricing in our industry has a questionable reputation. Part of the reason that marginal pricing has the reputation that it does is because the insurance industry is unique in the way that it approaches the pricing process. Unlike practically every other type of business venture, in the insurance industry we tend to rely on a pricing methodology which is known as Cost Plus. Cost Plus means that in order to determine how much you are going to charge the consumer, first you figure out how much it costs you to produce the item that you are going to sell, then you mark it up with a certain profit requirement or profit goal. Then we simply add the two together and the result is the amount that we charge to the consumer. This is a cost plus pricing algorithm. Now, you tend not to think of it as such when you study book profits or asset shares because we tend to bury the two steps together. But, anyone who prices to a certain goal is using a cost plus algorithm. If you set out to price a plan so that profits are 5% of premium or 18% internal rate of return, you are using a cost plus algorithm. Further, if you are using a cost plus algorithm, the lower your expense assumptions, the lower the price and, therefore, the undeserved bad reputation of marginal pricing. Marginal pricing is often looked upon as an excuse, a method for actuaries to fool themselves into developing a more competitive product, pleasing both marketing and management at the same time.

In order to analyze what types of expenses actually ought to be taken into account in the pricing process, I think we have to step back a bit and recognize that pricing is really a decision-making process. We tend to get lost in the process because of the fact that pricing insurance products is enormously complex. It's a very detailed science in itself for us just to figure out what the cost of goods sold is and that's what a lot of the research in the pricing arena has concentrated on. Nonetheless, pricing is a decision-making process. We're simply trying to decide how much to charge. We have a product, and we must determine how much to charge for it. Decisions involve, by their very nature, three steps. The first step in making a decision is to identify the decision set. What are my choices? What can I do? What are my options?

The second step is to evaluate the expected consequences of making each one of the choices in the decision set. If I make choice 1 versus choice 2 versus choice 3, what's going to happen? What do I think will happen?

The third phase of making a decision is simply choosing, making the choice once you've identified the elements of the decision set and evaluated the expected consequences of each element within the decision set.

Now, with respect to expenses, I feel very strongly that marginal expenses are the only type that should be considered in the decision-making process. Let me start with a simple example because things tend to get confusing when looking at insurance because it is more complex than other types of products. Let's pretend just for a moment that we own an airline. We have a 727 airplane that's going from New York to Los Angeles and we have a seat left open. A passenger walks up to the podium and has a ticket in his hand from one of our competitors, say, United Airlines, and it's a ticket worth $200. He says, "Will you give me this seat if I trade you my United ticket worth $200?" Now, we have to make a decision. Our first step is to identify our decision set. Well, here it's quite simple. We either take this person on the airplane for $200 or we say, go away, I don't want your $200, we'll fly with an empty seat. That's the extent of our decision set. Two choices.

What are the expected consequences of making each decision? Well, I'd say that if we turn the passenger away, we're neutral. We're exactly in the situation we were before this person walked up to the podium. If we do fly this additional passenger, our revenue increases by $200. We have to pay an 8% tax and probably have to feed this person honey-coated peanuts and a Coke and that will cost another $3.00. After all is said and done, I perhaps increase my bottom line by $175. With that, I've judged the expected consequences of each choice. If I turn passengers away, I'm neutral. If I accept the passenger's $200 ticket, I increase my bottom line by $175. The chances are that I take the additional passenger based on that analysis. That's the third phase; I make a selection from the decision set.

Let's complicate this example a little bit. Suppose that it really costs me $25,000 to fly this plane from New York to LA, including, fuel, crew, maintenance, and depreciation of the airplane. The plane holds about 100 passengers, so my "overhead" is $250 per passenger. Is this relevant to whether I want to take this person on the plane or not? I'd submit that it is not relevant at all . . . Completely irrelevant. And, as a matter of fact, if I include this expense in my analysis, I am implying that my expenses for taking this passenger are $250 plus the tax, plus the cost of his honey-coated peanuts and the Coke -- something like $275 to take this additional passenger.

What I've done by stating it that way is imply that by turning this passenger away, I can save this expense when, in fact, I cannot save this expense. Why? Because it's overhead. I can't save the $250 by turning the person away, so, whether it costs me $25,000 to fly this plane from New York to LA or $50,000 or $250,000, the proper decision is still the same. I still want to take the passenger because by taking this passenger, I increase my bottom line by $175.

Now, what I'd like to do before I continue is define what I mean by a marginal expense. In the insurance industry we confuse overhead and marginal expense. We tend to treat these words as meaning expenses which vary by policy count and expenses which don't vary by policy count. That's not a particularly tight nor useful definition of marginal expense or overhead. A more precise and workable definition of marginal expenses is the change in total expense as a result of an action. When defined that way, it becomes intuitively clear as to why these are the only types of expenses that I want to take into account in decision making. That definition is fairly rigorous; but what may not be immediately apparent is that the distinction between which expenses are marginal and which expenses aren't marginal is dependent on the elements in the decision set. As my decision set changes, so does my definition of marginal expenses. For example, in an insurance company, there is a multitude of levels of decisions that begin with the pricing process and end with whether we liquidate the company or not. Let's look at the pricing process itself as a decision-making process. The first stage is that of identifying the decision set. If I'm pricing a product, my decision set is composed of the various prices I might charge. I use the term "price" loosely since in the insurance industry we control both the wholesale and the retail price as a result of anti-rebate laws.

Price can mean lots of different things, all the way from level of service to our agents to commissions and so forth. My next step is to determine the expected consequences of charging a particular price for a product. Once I have my expected financial consequences, then my duty is to choose from the elements of the decision set, which are the various prices I might charge. Now, when I'm determining the price, are expenses such as the cost of the home office or

management salaries relevant? Well, again they're completely irrelevant. Whether I include these expenses or take them out, I'm going to arrive at the same decision because by the very fact that these are "overhead expenses" they do not vary by the choices within my decision set. For example, if I take the financial consequences of each of the elements of my decision set and subtract an equal amount from all of them I still arrive at the same optional choice -- the biggest number. So, overhead is completely irrelevant.

Now, we come to the zillion dollar question. I'm surprised that you are all so restrained that you haven't yet yelled it out. How do I know if I'm covering overhead? Well, you don't know. That's the answer. You don't know until you do a different kind of analysis. And in order to do that kind of analysis, it is necessary to expand my decision set. My smallest decision set is that involved in pricing -- how much do I charge? The next level of decision set involves the question, should I be selling this product or not? That's a different question, mandating different kinds of analysis, with a different decision set. As I expand my decision set, more expenses become marginal. For example, assume that I'm deciding whether to sell a variable universal life product or not and it's going to cost me $500,000 to buy an administration system. My decision set is composed of whether to sell this product or not.

However, I can't really begin there; I must first analyze the next lower level of decision and determine how much I would charge if I were to sell it. With this analysis, how much I spend on an administration system is irrelevant, completely irrelevant. Whether I spent $500,000 or $5.00 has no bearing on how much I will choose to charge for this product. Yet, when I expand my decision set to consider whether we will sell this product or not, now I bring the $500,000 into play. Why? Because one of the elements in my decision set (don't sell this product) enables me to save that $500,000 and as such it does have an impact on the financial consequences. Do I know if I am covering overhead yet? No. We can't determine the answer from this level of analysis. We expand our decisions set even further, perhaps considering whether we offer this product line or not. Should we be in individual insurance? Well, as we expand the decision set, expenses become marginal. Unfortunately, product development actuaries become marginal at that point. I still don't know if I'm covering overhead. I don't know if I'm covering overhead until I actually go to the top level decision. Should I keep my company or dump my company? But then, at that point, everything is marginal, or at least everything that's not irretrievably spent. Now comes the frustration for pricing actuaries; for years and years we've tried to come up with a method of analysis which does two things simultaneously: determine the price we should charge and second, determine whether we are covering overhead. I feel that it's not possible to answer both of those questions in the same form of analysis.

Another important point . . . Once I'm at the top level decision (that of company viability), if I decide that I'm not covering overhead, it would be a fatal mistake to go back down to the pricing decision level and change my product price. Why? Because if I've already evaluated the financial consequences of the various prices that I may charge and have picked the best one, I'm covering a certain amount of overhead, although a partial amount. If I vary my price, I'll cover less overhead than I covered before. There really are not only two different types of analysis but two types of action that will stem from the information resulting from the analysis. With the example of the $500,000 administration system, I'm often asked the question: "Does this mean that a start-up company that doesn't have a $500,000 administration system would

end up charging more for the variable universal life than a company that already spent the money on the administration system?" The answer here again is no. Two companies, everything else equal, one having already bought the system and one yet to spend the $500,000 would both end up with the same price; the $500,000 is irrelevant to the pricing decision. Yet, when we expand the decision set, for example if we're deciding whether we should enter this product line or not, the company that's already spent the money would be more likely to proceed then the company that didn't spend the money. But, as far as price is concerned, if both companies were to go ahead, the price would be the same.

I'd like to leave you with just a few conclusions. The first is that overhead is always irrelevant to decision making. However, the definition of what's overhead and what's marginal expense changes as the question that is being asked changes. Overhead is very much dependent on your decision set.

The second notion is that funds that are irretrievably spent are always overhead. There is no action that you can take to save this money; therefore, it's irrelevant to all your analysis.

The next notion is that a very critical step in your pricing process or expense analysis process is to identify the decision set. This is a step that's most often left out when beginning a pricing project. I realize it's difficult because management will deem that we're going to do such and such a product; if you ask, well, are we just thinking about doing it or are we really going to do this no matter what, management might say, "We're doing the product no matter what." Then you show management some numbers and they say, "we can't do this." It's a little bit difficult to identify the decision set but the attempt should be made. It's only through identification of the question at hand that you can do the proper analysis.

The last point I'd like to leave you with is that unless pricing is considered a decision process, an optimization process among different courses of action, then I feel that it's rather irrelevant what kind of expense analysis you do because you're in trouble right from the start. It has become apparent over the past 10 years or so that a predetermined cost plus algorithm has failed us.

MR. JEFFREY D. MILLER: What I'd like to do is to provide some description of a practical case that illustrates what Shane has just said. We've heard some excellent theory. I subscribe to it completely. I'd like to provide you with a case study.

I've been a consulting actuary for 11 years, first operating in a very small firm and then in a small start-up office at Tillinghast. As a result, I've probably worked on more funky life insurance marketing programs and start-up programs than you can imagine.

I'd like to share an experience that I've had over the last three or four years with a start-up marketing program for group universal life products. Although the title of this session is Pricing for Individual Products, this particular plan is a voluntary group universal life product, using payroll deduction premium payment techniques. The fact that it's group is somewhat irrelevant. One of the conclusions that you will reach, or certainly that I've reached in working through this process over the last several years, is that the most expensive problem a company can have is management indecision relative to new programs.

The story I'm going to tell you illustrates at least three cases of such management indecision.

This group universal life program was the brain child of a good friend of mine, a client that I've worked with for some time. He worked for a life insurance subsidiary of a P&C company. This company was, in turn, owned by a consortium of hospitals. The primary focus of this P&C company was to provide medical malpractice coverage for its owner hospitals. Their life company was an ancillary activity, but since they had it, they figured there were a lot of neat things they could do with this life company, e.g., market health insurance programs through their hospital connections, and market life insurance products and health insurance to the employees of their member hospitals.

Unfortunately, the P&C parent ran into a little problem. Just as the life insurance company was beginning to sell this group universal life program, the P&C company received a visit from their friendly casualty actuary. The casualty actuary informed them that their reserves for their medical malpractice business were slightly understated. . .or maybe more than slightly understated.

The net result was the P&C company had to go up to Papa (the hospital consortium) and say, "Dear Papa, I need more money now in order to be solvent." It's like that Western Union commercial, "please send money now." And Papa said, "You know, if you're going to get his additional money, then I want you to concentrate on what we hired you for in the first place; that's the medical malpractice business. Dump this life insurance program now, because that's distracting you."

Papa was probably right. The company probably should not have been in the group universal life business in the first place. But, because they were, and because they were pursuing that program, they had spent a lot of money that was completely wasted. They also fired my friend. So my friend said, "Working for somebody else's company is not really very much fun. I'm going to start my own company -- a marketing and administration organization for group universal life." That sounded like a good idea. So he struck a partnership with another life insurance company.

Now it's Game 2 of the Series. The second life insurance company was a life subsidiary of a major industrial corporation. The major industrial corporation had all these MBAs and accountants (all very, very smart people) who did not know up from sideways about the life insurance business. So, this little life insurance subsidiary of a major industrial operation was cranking along selling competitively priced term products in the brokerage market. They were reporting lots of volume, billions and billions of dollars of insurance sold, and even some good GAAP earnings. Now, any of you who have experienced GAAP earnings know that sometimes, not always, there is a lag between what's reported in GAAP earnings and what the reality is. In this particular case, there was a bit of a lag. So what happened was, just as Company 2 was pursuing my friend's program (and had done a lot of development work to bring up group universal life), those GAAP earnings started reflecting reality a little and began going downhill. So guess what happened next? The giant industrial corporation decided that being in the life insurance business wasn't nearly as much fun as it used to be. So they put their life company up for sale. Guess what happened to my friend and his group universal life marketing administration organization? They were dumped. It was once again an ancillary program; that was loss two in the series. We hope this is not going to go on forever.

My friend considered his choices and went to another life insurance company. This new life insurance company, he figured, would be a whole lot better because it was a small life company subsidiary, owned by another subsidiary, owned by another life insurance company that was also growing very rapidly. They had been looking for a new program to pursue, and thought his group universal life program was an excellent idea. However, what we didn't understand was that this rapidly growing life insurance company, where he is now connected, has needs for additional capital. Anyone who has done extensive analysis of the cash flows of a life insurance company (particularly a rapidly growing one) knows that, while that company is growing, you must keep pumping money into it all the time. The parent always needs to put more capital into the business and, further, the earnings from the business always depress the GAAP earnings (that's because of our accountants: they have that GAAP model that sometimes doesn't really tell you what's going on).

So, the owner of this life insurance company needs to keep putting money in. And, they can't get the money out unless they sell the thing. Of course, they have fairly depressed earnings while they own this life insurance company; you really have to be committed to the life insurance business in order to like that situation. The cash flows may provide an excellent return, but you can't get your money out for a long, long time.

Well, just as my friend started working with his third life insurance company, the parent decided that they had other uses for that capital and wanted to get their money out. So the parent put the third life insurance company up for sale and guess what happened to my friend once again? Well, that was Loss 3.

And now, we're finally in Game 4 for my friend. I think he had learned some lessons from his first three activities. In each case the company had spent a lot of money getting up to speed with his program, and in each case they dumped it. In my experience, that's the most expensive part of life company management, at least for the companies that I've been dealing with recently.

Well, now it's time for Game 4. My friend can see the light at the end of the tunnel. He's now associated with a life company that has been in the business of starting new life insurance programs for quite some time. They have a track record of several new life insurance programs that are now working and which have been started up with independent marketing and administration organizations. The company's management is much more realistic regarding how much it costs to get the program going and what's necessary to make the program succeed in the long run.

What I'd like to do during the remainder of my remarks is to describe this relationship between a life insurance company that is good at starting up new marketing programs, and my friend, the third party marketing and administration organization. Currently, the third party marketing and administration organization is going to be jointly owned by my friend, the entrepreneur, and the life insurance company. There's going to be a shared ownership of that corporate organization. The life insurance company is providing venture capital to help the administrative and marketing organization get going. My friend is also providing part of the venture capital. Finally, the administrative and marketing organization itself has gone to the bank and borrowed money to help finance its activities as well. This organization is truly a partnership among a number of parties.

The organization has prepared monthly cash flow budgets for all of its expense elements and is measuring its activities monthly against those cash flow budgets, then reporting them to its life company investor, to its entrepreneur, and to the bank. Each program that the organization is either currently marketing and administering, or planning to, is priced with expense assumptions that are considered to be slightly below the standard industry competitive expense level. And those unit expense assumptions are taken into the marketing and administration organization as revenue. Then, the marketing administration organization, of course, incurs its cash expenses each month. We've done monthly projections that show what the net cash flow of that organization is going to be under various production scenarios. The products that the organization is selling are then priced, using the unit expense assumptions which we've taken from the market. We've also taken into consideration the market price of products the organization is currently selling. Of course, this all involves competitive analysis and very difficult judgements. But I think we're still adopting Shane's approach -- we're not just using the cost-plus pricing; we're getting as much as we can.

So, the products are priced and the life company then has its profit objectives. If a program meets the profit objectives, then we do it, and, if it doesn't meet the profit objectives, then we don't do it. The revenue to the marketing administration organization, though, is expressed in these market unit cost figures.

There's also a back door relationship between the life company and the marketing organization because the life company is reinsuring back a portion of the business written by the marketing organization. The purpose of the reinsurance is to give the marketing organization an opportunity to share in the excess profits it might generate by charging a market price that's high relative to the assumed market expenses. Of course, that rewards the marketing organization for finding a good deal. Cash flow projections then are used by both organizations: the life company to understand the cash flows of the product and the marketing organization to understand their cash flows using unit expenses and their actual cash expenses.

What will happen? What will be the bottom line? If the marketing and administration organization is successful in selling a significant volume of business under the profit objectives that have been established by the life company, then my friend will get rich and the life company will receive an excellent return on its venture capital investment in the marketing administration organization. Finally, the life company will have a new distribution outlet for products that will be more controlled than most other distribution outlets because it will have an ownership interest.

Now, of course, the big problem will be if we do all this and we never sell anything. And, of course, that's the real risk that everybody is taking in this venture capital investment. I believe this model is quite sound, but yet it certainly isn't easy and there are no tricks about it. You start up an organization, pursue a market, and work real hard. You recognize that you're taking risk investing in a new distribution outlet, and by doing so, you could either lose your money or make a lot of money. If it's a success, you will control or have some measure of control over additional business written by the company.

This whole process of investing in distribution systems has always been the key to success for life companies -- much more so than investing in products or developing new products. And, so, some things never really change.

MR. LYKINS: Before opening up the questions, I'd like to mention an example of marginal pricing that one company has faced. The company is a life insurance company that decided to also sell investment products such as single premium annuities, mutual funds and limited partnerships, and became so successful at it, probably more successful than they might have imagined, that some of their agents who used to be large life producers began selling primarily investment products. As a result, the company faced the kinds of problems that you fear when you marginally price. In this situation, you don't intentionally marginally price; you look at this alternative marketing effort from an investment perspective; you make an investment that has a good ROI on it, one with a reasonable return. It's adding to the bottom line, and it helps your agents improve their income. So, you're not looking at it when you go into it as something that is marginally priced. Yet, when you go into a secondary business that cannot bear the same kind of overhead cost that your principal business does, and the life business has a heavy burden of costs, you have to meet the marketplace if you're going to be in that business. You make good profits on that business but it just doesn't contribute what your life business does to your overhead. Therefore, there always is the danger that there will be a shift in business that will cause some dire problems. So, this particular company is trying through various kinds of incentives to persuade its agents not to sell less of those investment-type products, whether they be single premium life or annuities, mutual funds or whatever, but to sell more recurring premium life products. In other words, the company is perfectly happy to have all of those investment products, because they are profitable, but they don't want their field force to be replacing what used to be life business with investment business.

FROM THE FLOOR: In your airline example, what if your decision to sell a ticket at $200 induces the regulators to mandate that all tickets in the future be sold at $200?

MR. CHALKE: I have two or three comments in response to that question: first, faced with a situation where I have externalities from government political forces that impact my business, I might make a different decision; but the point is that my method of making the decision would be identical. I would still price my decision on a marginal basis. I would still face the same decision set: I can take the passenger for the $200 or I can refuse the passenger. However, faced with government externalities, my marginal cost would be different. If I fully anticipated that there was a possibility that by charging $200, I would have to charge $200 forever, then there's a marginal cost of admitting that passenger for $200. And I might well find out that by analyzing that element of the decision set, there is a monumental potential loss in taking the passenger at $200. So in a sense I agree. Take into account everything you know about, everything you can possibly anticipate. But, that doesn't change the method of my analysis, it only changes my answer.

My second comment relates to self-delusion. It's very important to recognize that marginal pricing combined with a cost plus paradigm is deadly. It doesn't work. As a matter of fact, it doesn't work quite quickly. It's critical not only to take into account expenses which are marginal to each action but also to optimize at the same time. Without both of those methods used together, you can't make the appropriate decisions. I'm deluding myself if I take my actuarial development cost and divide it up on a per unit basis and think that I can develop a product for a buck a policy. I can't. I can't buy actuaries for a

buck a policy. I'd actually like to see the question phrased in next year's program, "to what extent is it appropriate to take into account overhead?"

MR. JOHN H. KERPER: A recent survey indicated that we do a lot of our pricing on a sell basis. We do the cost-plus rate-of-return-on-equity percent-of-premium profits. That is what the management of our companies is used to looking at; they then say, "okay, this is a viable product, go ahead and sell it." What I think I hear you say is that we should consider all the potential sales, get an idea of what the sales potential is and do our pricing for that, determine how much is thrown off, total dollars to the company from the prices that we've set, and then do our analysis, including ROEs, based on the total pricing. Am I hearing you right when I say that?

MR. CHALKE: You couldn't have said it better if I paid you to do so. That's perfect.

The pricing methods that we've used in the past have been primarily chosen because they were the best models that the state of our art could deal with. Today there are tools and techniques that look at pricing on an aggregate basis and allow us to make better decisions. It's not a matter of changing the way we'd like to do things; it's just a matter of applying better tools to address the same problems.

MR. DAVIS: I agree with almost everything Shane has said about marginal pricing. However, whether you use marginal pricing or you do reflect overhead, or what you do, when you're done, you are going to look at the price you've developed and compare it to the market price. If you're way below the market or if you're way above the market, you are going to make some changes; you're going to fine tune that premium to ultimately get where you want to be in that market. So, it may not matter what expenses you use, you're going to end up with a premium rate that puts you where you want to be in relation to all companies. Shane also talked about macro pricing -- can I cover my overhead? That's a field that is getting some attention now. Macro analysts may be appropriate when you're looking at marginal expenses in pricing your products.

MR. MILLER: It would seem to me that when you start out to develop a product, you set the price based on the market first rather than go through an entire process, come up with the price and then compare it to the market. I would set the price based on where I want to be in the market, as the first step in the process, and then analyze whether I can live with that particular situation.

MR. CHALKE: One of the fallouts of a cost plus pricing paradigm, which we've had in our industry almost forever, is that we have a tendency for the price to gravitate toward the market. With a more holistic approach, we can actually test the financial effect of charging more than everyone else. Sometimes that makes you the most money. Maybe you sell two-thirds as much; maybe you anger your field force. Sometimes, these things pay off. I think it's interesting to consider why we have a cost plus paradigm. It comes from history, the fact that insurance started as a cooperative (co-op) form of organization; people got together and said, we're going to pool our risk and charge ourselves for the service that we provide to ourselves. Once you have a co-op form of organization, the initial rational pricing strategy is that of cost plus because of the fact that you don't want to charge yourselves more than what it costs plus a little bit of cushion for contingency or surplus. Mutual companies are, in a sense, a

form of co-op organization. They may feel constrained by this form or organization and feel that they have a moral duty to charge based on a cost plus algorithm; however, if the cost plus price is higher than the "optimal price," the co-op is going to disband. People are going to leave the co-op. And this is what happened to mutual companies in the late 1970s, as the co-op started to disband. As a result, mutual companies started moving closer to a market pricing strategy. At best, if you're a mutual company, you have a very difficult problem; perhaps the solution is charging the lesser of the co-op price or the optimal market price.

MR. JOHN RANDOLPH DOBO: It seems difficult to get management to pin down the question being asked. Do you have any suggestions?

MR. CHALKE: I think the answer lies in pushing harder for the definition of the decision set when the project starts. If management says, "we're going to have a variable universal life product," make sure what are the true constraints of the decision set. You can do that by asking pointed questions. For example, if you're going to lose $3 million on this project, are you still sure that you want to do it? Sometimes, you get a different answer if you ask the question in different ways. The key is to thoroughly define what the decision set is. If management feels that, regardless of whatever loss is entailed, they want to go ahead with the project, then in a sense for this particular project, overhead is free.

MR. MCINTURFF: Something that we're developing at the request of management is a tool that will give them some perspective on what margins are priced into products. The idea is to communicate to both management and the field force that there are products that have less value to the company -- in a production credit system, for instance, which gives more credit for higher margin products. That's one way that you can keep in perspective that you do have products that are priced differently relative to some of your expenses such as overhead.

MR. JOHN W. HADLEY: The higher-level decision is "should we be in the product line?" "Is the company viable?" You are always pricing a product to give you the maximum return; in effect, you're optimizing. Generally, the goal has been to achieve at least this profit objective. Now we have a range of alternatives, and it's negotiation with the marketing department as to where you're actually going to be within that range. Doesn't your higher-level decision process fall down in that case?

MR. CHALKE: It does. In order for this holistic view to work at all, it's necessary to analyze a range of prices above and below what's stipulated by a kind of hurdle or profit goal, and to make sure that you are using an optimization process rather than cost plus. If you're using cost plus, then the various levels of decision really to break down. It's necessary not only to try a price that gives you 4% or 5% of premium profit but to try one that gives you 10% or 15% as well. Obviously, sales will suffer if such a product if offered. It then becomes a question of business judgment: how much will sales suffer and do you make more or less money? In actuality, by implementing this optimization process and the various levels of decision, we can get companies out of this continual spiral of always having a product that has to be better or more competitive than the previous product. It seems to be the best way to break out of this price spiral.

MR. LYKINS: Several of our panelists mentioned the exclusion of certain expenses from pricing, specifically, as a justification, to consider them some sort of investment. I'm wondering in those situations whether the companies look upon those investments from an ROI perspective, whether they look at what they're getting in return for the investments. And if you are, in fact, doing an ROI, then you're implicitly not really excluding it from pricing because there are some income streams that are attributable to those investments that you must segregate. A related question is what happens in future years when those income streams materialize? They're not entirely available for expenses. Additionally, there is a need to follow up on your ROI calculation to see whether you achieve the rate of return that you expected.

MR. CHARLES P. ELAM: I would think that a consultant would find client companies very receptive to the decision process you described relating to marginal pricing but must less receptive to the higher-level decisions that you talk about: are they a viable company, or should they be in a product line at all? Are you seeing that to be the case, that they take it at the lower level but don't follow through?

MR. CHALKE: I think that companies are resistant to all decisions regardless of level. We've all experienced that. For some reason, it's assumed that in the pricing process you cover all levels of decision making. The presumption of management is that if you price a product, you've taken care of everything from top to bottom. In fact, that's not true; it mandates looking at things at different levels.